

What is claimed is:

1. A cylinder head (1) for a liquid-cooled multi-cylinder internal combustion engine, with at least one intake- and at least one exhaust port (16, 17) per cylinder (A, B), and with a cooling chamber configuration (3) adjacent to a fire deck (2), which is partitioned by an intermediary deck (4) essentially parallel to the fire deck (2) into a lower cooling chamber (5) next to the fire deck and an upper cooling chamber (7) adjoining said lower cooling chamber in the direction of the cylinder axis (6), where lower and upper cooling chambers (5, 7) are flow-connected by at least one main transfer opening (22) per cylinder (A, B) in the area of a side wall (1c) of the cylinder head (1) and by at least one auxiliary transfer opening (9a, 9b) in the region of an opening (20) for the insertion of a preferably central fuel injection device (11), and where at least one feeder inlet (13) per cylinder (A, B) for a cooling medium opens into the lower cooling chamber (5) and at least one draining outlet for the cooling medium departs from the upper cooling chamber (7), and where a lower cooling chamber (5) is provided for each individual cylinder (A, B), the lower cooling chambers (5) of at least two adjacent cylinders (A, B) being essentially separated by a partitioning wall (12) and the cooling medium flowing essentially transversely to the cylinder head (1) in the lower cooling chamber (5), while the upper cooling chamber (7) extends over at least two cylinders (A, B), wherein at least one auxiliary transfer opening (9a, 9b) is configured as a recess (20a, 20b) in the insertion opening (20), and at least one first auxiliary transfer opening (9a, 9b) is located in at least one of the areas (30, 31) between the intake passage (16) and the insertion opening (20) and/or between the exhaust passage (17) and the insertion opening (20).
2. A cylinder head (1) according to claim 1, wherein at least two auxiliary transfer openings (9a, 9b) are provided, which are configured as recesses (20a, 20b) in the insertion opening (20), at least one first auxiliary transfer opening (9a) being located in the area (31) between the exhaust passage (17) and the insertion opening (20) and at least one second

auxiliary transfer opening (9b) being located in the area (30) between the intake passage (16) and the insertion opening (20).

3. A cylinder head (1) according to claim 1 or 2, wherein at least two auxiliary transfer openings (9a, 9b) are located diametrically opposite each other with respect to the insertion opening (20).
4. A cylinder head (1) according to any of claims 2 to 3, wherein the first auxiliary transfer opening (9a) has a larger flow cross-section than the second auxiliary transfer opening (9b).
5. A cylinder head (1) according to claim 4, wherein the flow cross-section of the first auxiliary transfer opening (9a) is roughly twice as large as the flow cross-section of the second auxiliary transfer opening (9b).
6. A cylinder head (1) according to any of claims 1 to 5, wherein only part of the coolant flow volume, i.e., preferably 20% to 40% of the total coolant volume passing through upper and lower coolant chamber (5, 7), will flow through the auxiliary transfer opening (9a, 9b).
7. A cylinder head according to claim 6, wherein two thirds of the partial flow volume will pass from lower to upper cooling chamber via the first auxiliary transfer opening (9a) and one third of the partial flow volume will pass via the second auxiliary transfer opening (9b).
8. A cylinder head (1) according to any of claims 1 to 7, wherein the auxiliary transfer openings (9a, 9b) are made by casting.